Sustainability Greenprint

May 21, 2013

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Sustainability: Greenprint

*Please note Greenprint is only reporting on a portion of the Sustainability indicators. For a complete list of measures for each indicator please visit http://www.ci.minneapolis.mn.us/sustainability/.

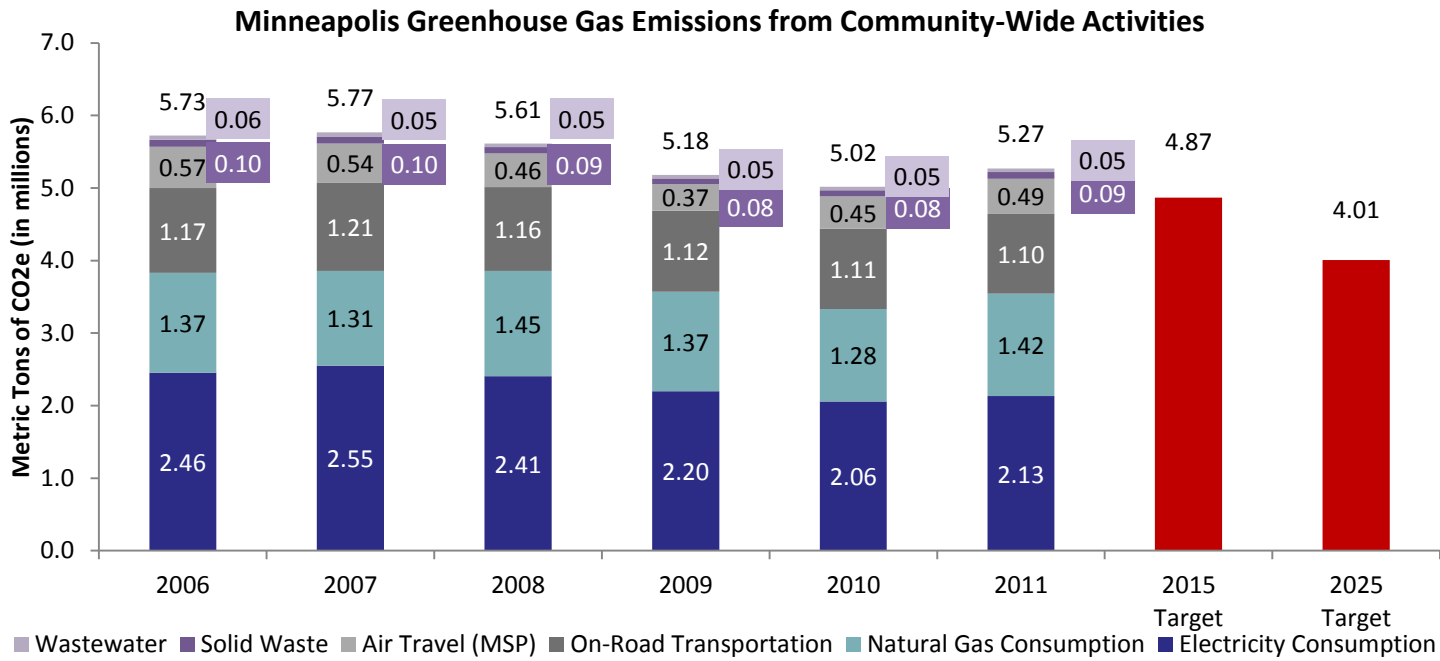
Introduction

Cities have emerged as leaders in connecting environmental quality, economic prosperity and community vitality and inclusivity. For the eighth year in a row, the City of Minneapolis is tracking progress toward 26 Sustainability Indicators. Monitoring the 50+ related numerical targets helps us gauge successes and challenges as we strive to make Minneapolis a healthy, thriving and equitable home for current residents and future generations.

This is the second year of *Results* – Sustainability. In 2012, we tried to cover all 26 indicators. In 2013, we will have two progress conferences, first focusing on the twelve "Greenprint" (environmental) areas followed later in the year with "A Vital Community" measures.

Overall, the quality of the data continues to improve and tell a more complete story. These indicators and measures are updated approximately every two years. Staff anticipates bringing recommended changes to the Mayor and City Council in the first half of 2014.

The City's success speaks to the commitment of the elected officials, city departments and staff embracing the City's vision, and our partnering with our boards and commissions, other agencies and stakeholders.



Target: Reduce citywide greenhouse gas emissions 15 percent by 2015, and 30 percent by 2025 using 2006 as a baseline.
Source: City Coordinator's Office

Why is this measure important?

The scientific consensus holds that increasing concentrations of greenhouse gases in our atmosphere are destabilizing the earth's climate, and that human activity is the primary driver of these emissions. Without rapid action to reduce these emissions, we will face threats to our economic livelihood, public health and supplies of food, fresh water and power. These impacts will not be felt equally across the globe: the poorest regions of the world will likely be the hardest hit. Likewise in our own community, low-income and vulnerable citizens face disproportionate impacts from climate change. Across the world, climate change impacts are already being felt through droughts, extreme weather events, disrupted ecosystems, rising sea levels and ocean acidification.

The City Council has adopted aggressive targets to reduce Minneapolis' contribution to global climate change: a 15 percent reduction by 2015 and a 30 percent reduction by 2025, both below 2006 levels. Realizing the importance of energy use and emissions impacts of the government enterprise, the Council has also adopted a target for municipal operations: to reduce greenhouse gas emissions from municipal operations by 1.5 percent annually.

What will it take to make progress towards these goals?

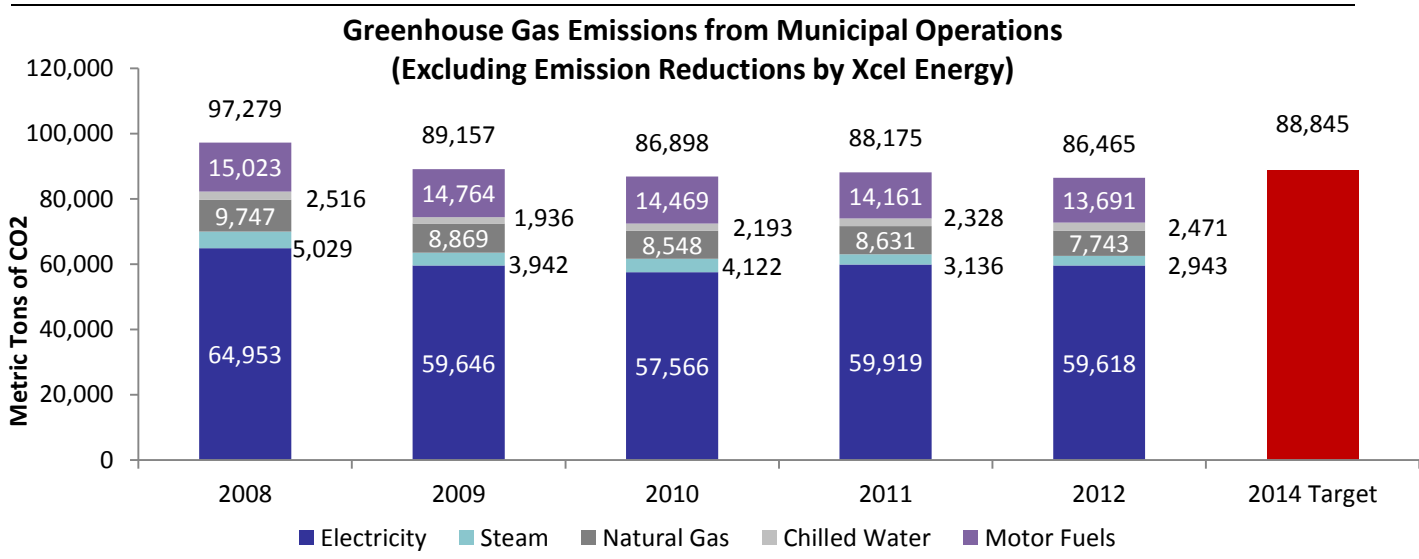
Between 2006 and 2011, city-wide greenhouse gas emissions fell eight percent. A substantial portion of this decline was due to Xcel Energy providing electricity generated from cleaner sources, such as wind and natural gas. Overall trends in electricity usage show a downward trend, the number of vehicle miles traveled in the city shows a downward trend and on-road vehicles are becoming more fuel efficient.

Future changes in Xcel's generation mix are not likely to be adequate to meet Minneapolis' climate goals, as they are projected to change slowly after 2015. Meeting the goals for citywide emissions reductions will

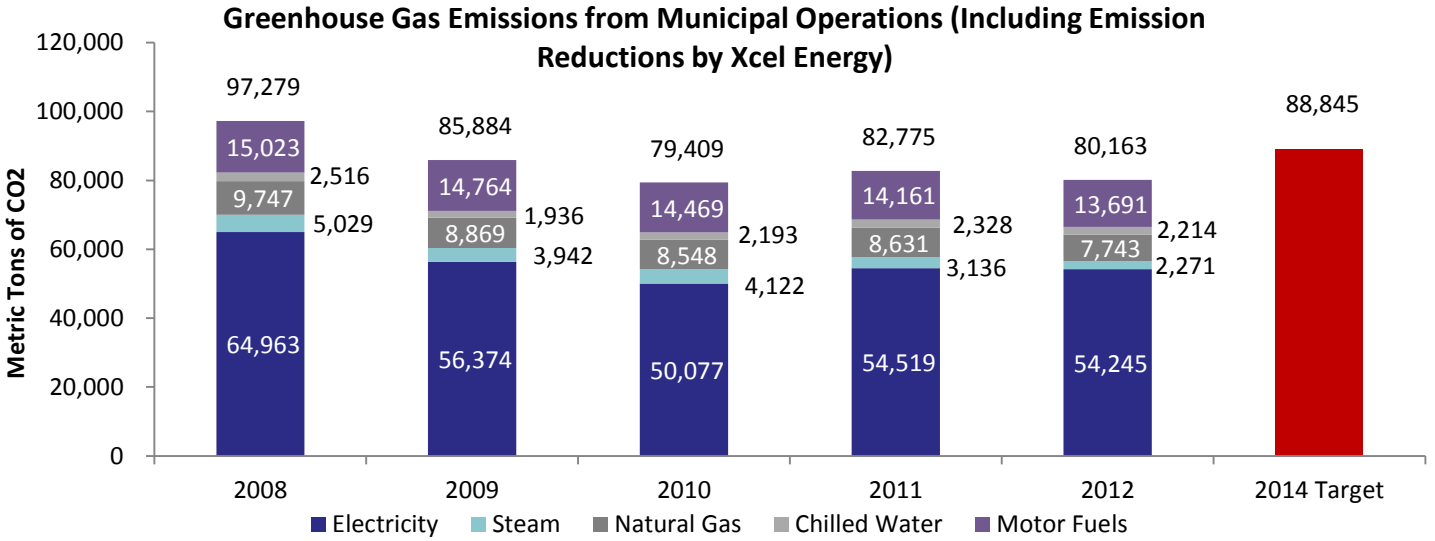
Additional Data and Narrative on Next Page…

mean taking significant action on energy efficiency, renewable energy deployment, transportation mode shifts and waste reduction and recycling. The Climate Action Plan, which has been under development for the past year, identifies a number of strategies that can be pursued in these areas to move Minneapolis towards these goals.

Minneapolis has been very successful in reducing greenhouse gas emissions from municipal operations, with a 17 percent decline between 2008 and 2012. In the past four years, $1.86 million of Federal Stimulus funds have been spent on installing more efficient heating and ventilation equipment, retrofitting light fixtures to high efficiency fluorescents and adding insulation in buildings owned by the City. These investments have significantly reduced energy usage in City owned facilities. Reductions in energy usage have also come from the no idling policy of City vehicles, new more fuel efficient vehicles and the implementation of a uniform temperature policy in City buildings. When compared to energy usage in 2008, these changes have saved the City over $6 million in avoided energy costs. Future improvements in this area are possible, with significant opportunities in the retrofitting of streetlights to LEDs, which can cut lighting costs by 50 percent. Further efficiencies are also possible at the Water Works, which is the largest single user of electricity in City operations.

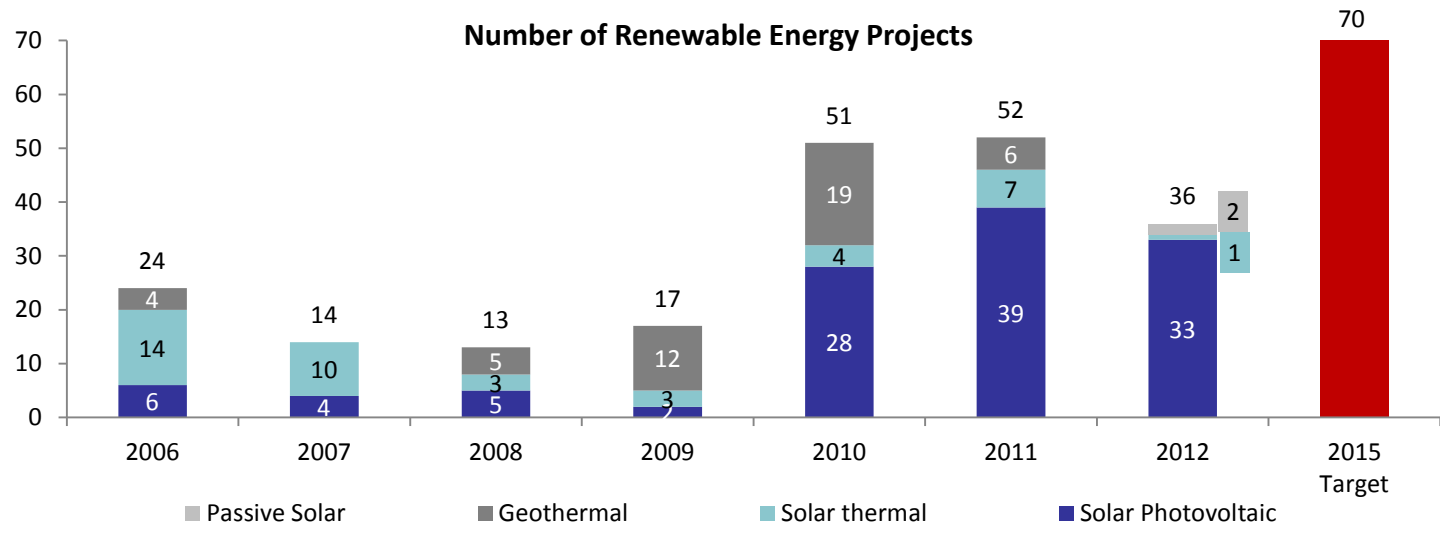


Target: Reduce municipal operations greenhouse gas emissions by 1.5 percent annually.



Target: Reduce municipal operations greenhouse gas emissions by 1.5 percent annually.

Source: Property Services



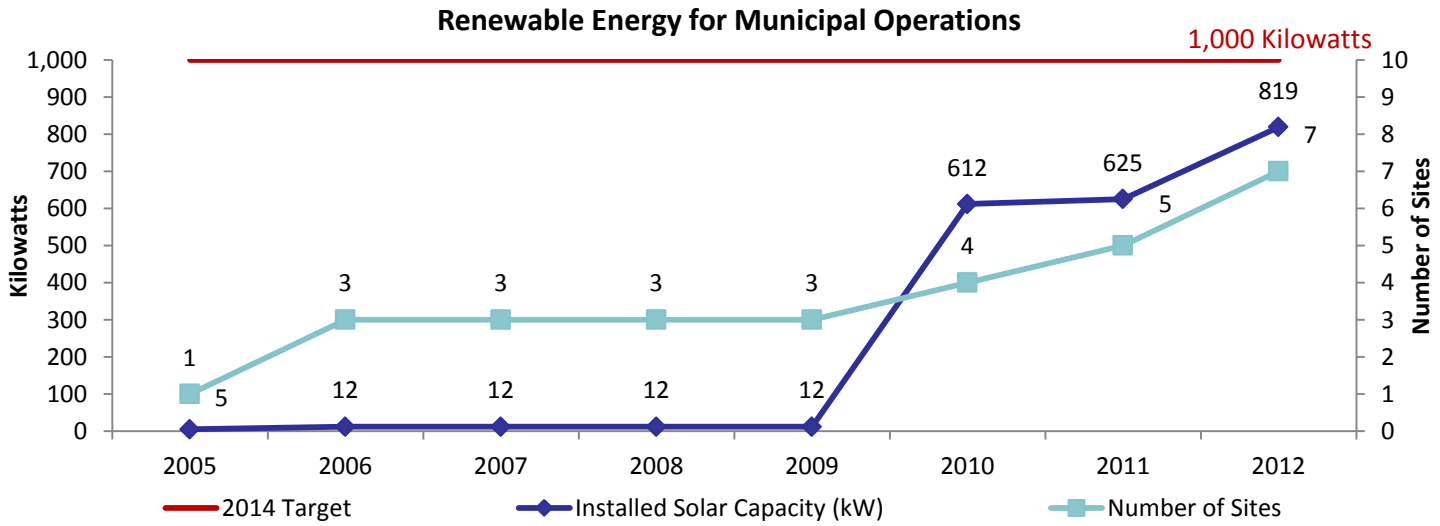
Why is this measure important?

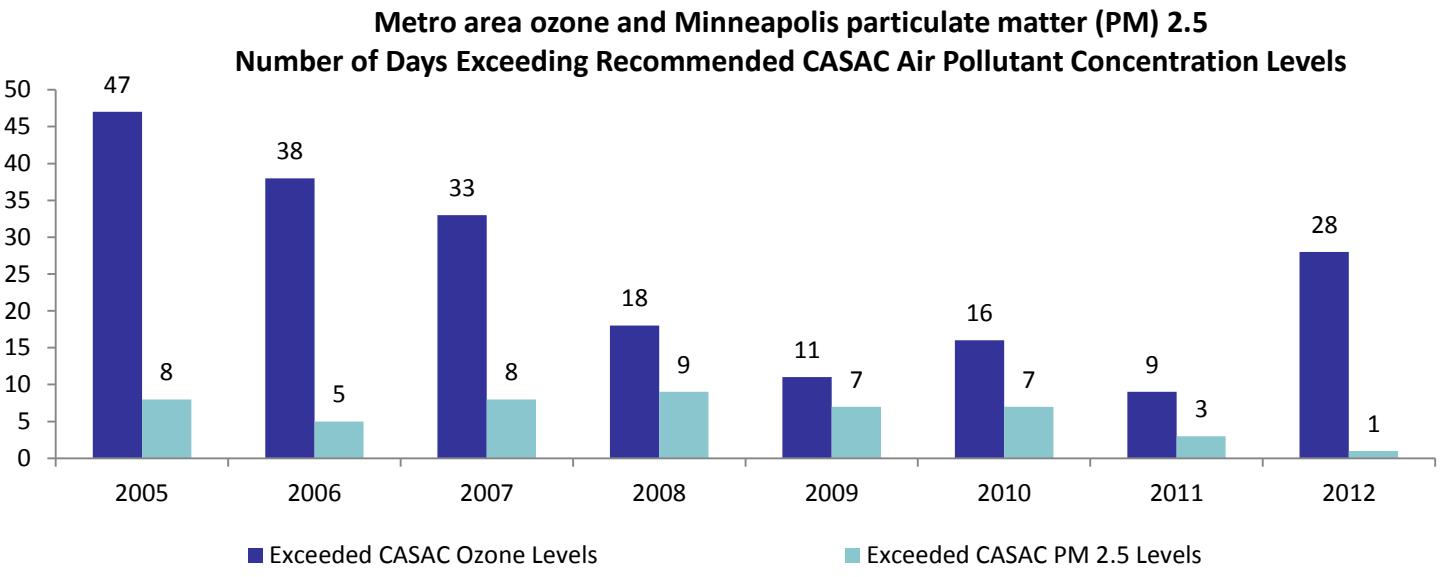
In the face of climate change and harmful pollution levels created by our current energy consumption, it is critical to use more renewable energy, including solar, wind, biomass and hydropower. Renewable energy contributes to energy security, stable energy pricing, climate change solutions and green jobs.

What will it take to achieve the target?

Rapidly declining prices for improved solar technologies along with reduced and streamlined permitting in the City are bringing increasing amounts of solar energy into the mainstream. However, cheap natural gas prices, short term financial incentives by the utilities along with outdated clean energy policies at the State level are hindering wide scale solar increases. The legislature and Minnesota Public Utilities Commission need to develop a more sustainable energy policy and regulatory framework in order to drive down costs and make it easier to install solar and wind for large and small systems alike.

In 2012, Federal stimulus funds were used to install solar power on four city owned buildings. In 2012, the City used its own solar photovoltaic (PV) systems and Windsource purchases for 1.1 percent of its total electricity use. To reach the 1000 kW renewable goal on City owned facilities an additional 186 kW of solar will be needed at an estimated cost of $700,000 in capital expenses under the state's current energy policy.





Target: Reduce air pollution in the Minneapolis area to health-based levels recommended by the Clean Air Scientific Advisory Committee (CASAC) of the U.S. Environmental Protection Agency (EPA).

Why is this measure important?

Air quality in Minneapolis is among the best of large metropolitan areas in the U.S. Still, the area has air quality issues that contribute to health problems such as asthma, lung disease and heart disease. Most air pollution comes from fossil fuel combustion for transportation and electricity generation.

What will it take to make progress?

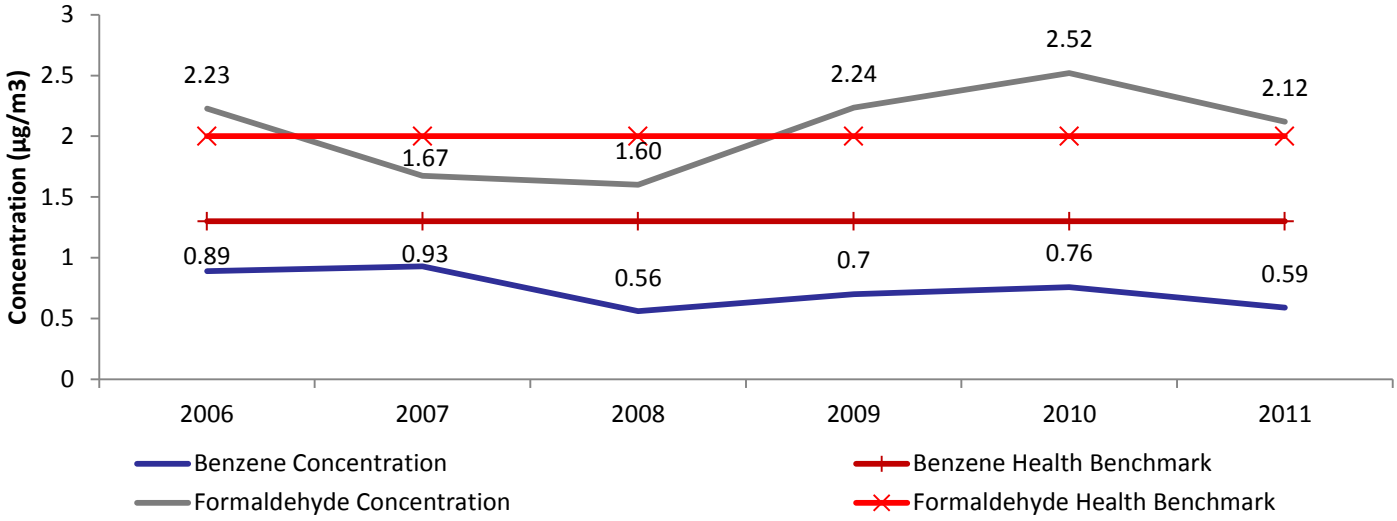
Measurements taken on particulate matter and ground level ozone are done on a metro wide regional level. This in addition to the fact that outside contributions, such as wildfires or industry elsewhere, make air quality in Minneapolis a complicated issue to address locally.

While many factors are out of our control, we are examining sources that are derived from Minneapolis and what can be done to address them. We are examining our fleets to continue to look at more efficient models and uses of vehicles. In 2012, the City's Fleet Services Division put 140 new vehicles into service, with 60 percent using alternative fuels that emit fewer pollutants into the air. In early 2013, crews finished installing new traffic control technology on Hiawatha Avenue in South Minneapolis aimed at reducing long wait times for drivers. By cutting down on unnecessary vehicle idling, the Hiawatha Traffic Signal Timing Project will reduce emissions and air toxins. We have also started a Green Business Matching Grant program to offer incentives to business like automotive shops and dry cleaners who take proactive steps to reduce potential air pollution. The City of Minneapolis played an active role this year in working on the Clean Air Dialogue through the Environmental Initiative to propose changes that need to take place on a state level to address air quality in Minnesota.

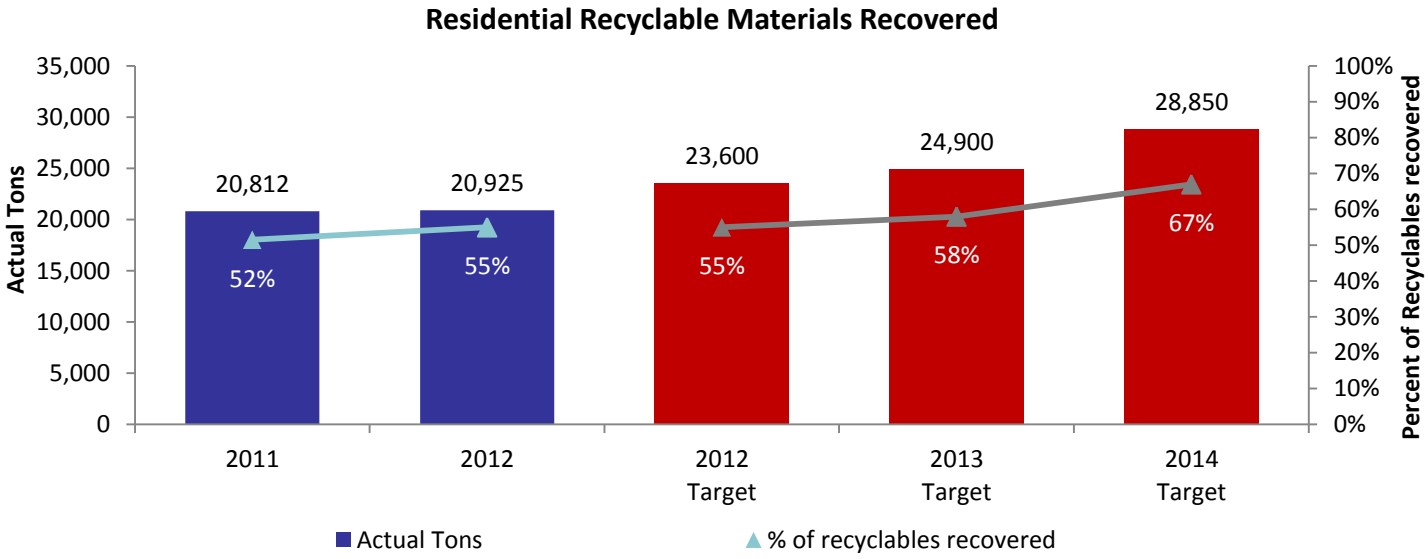
While the target for the air toxin indicator (next page) is *all* air toxics, benzene and formaldehyde are a couple air toxics that have approached or exceeded health benchmarks. The increased efficiency of cars coming into the market will be the primary driver in reducing these two pollutants. Increasing vehicle efficiency through our fleet upgrades and reducing idling times through traffic lighting adjustments should help reduce emissions of these two pollutants. The City of Minneapolis is serious about taking a neighborhood approach to both air quality monitoring as well as utilizing programs to like the Green

Business Matching Grant program to address local sources of air toxics in our city in 2013. The work being done in other Sustainability Indicators such as Climate Change, Renewable Energy, Tree Canopy and Biking will also go a long way towards improving the air quality in our city.

Average Benzene and Formaldehyde Concentrations, All Test Sites



Target: Reduce all monitored air toxics to levels within state health guidelines by 2015.
Source: Minneapolis Environmental Services



Target: Recover 67 percent of all recyclable materials from the residential waste stream by 2014.
Source: Minneapolis Division of Solid Waste and Recycling

Why are these measures important?

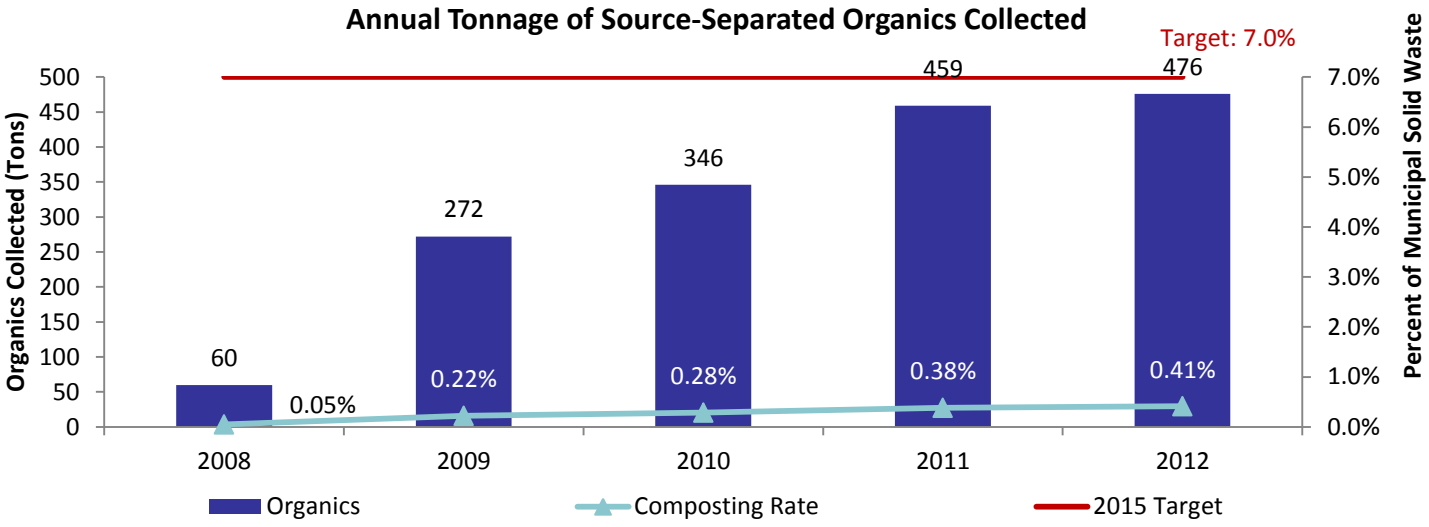
Economic activity and daily living produce materials that are classified as waste. Limiting consumption of natural resources to levels that the planet can manage, processing waste by recycling and converting waste to energy are priorities for the City. Most of the waste in Minneapolis is from the packaging of purchased goods.

The percentage of the solid waste stream that is recycled (tonnage) is important because it indicates the extent to which Minneapolis Solid Waste customers actively participate in recycling programs, assists in identifying areas that may require additional education efforts and helps to determine the achievement of Hennepin County recycling goals.

What will it take to achieve the targets?

The roll-out of a one-sort, single stream, collection method to approximately 30 percent of our customers has made recycling easier for our residents, resulting in a noted increase in material volume. Continuing to roll-out the single stream program to our remaining customers by Summer 2013, will result in a significant increase in recycling volume by the end of 2013.

In addition to the above methods, the targets will be achieved through an aggressive educational plan in partnership with Hennepin County. Further recycling initiatives will be expanded to include neighborhood and school educational focus and mandatory recycling at special events.



Target: Increase recovery of residential source-separated organics (SSO) from 0.3% of municipal solid waste (excluding yard waste) in 2010 to 7% annually by 2015.

Source: Minneapolis Department of Public Works

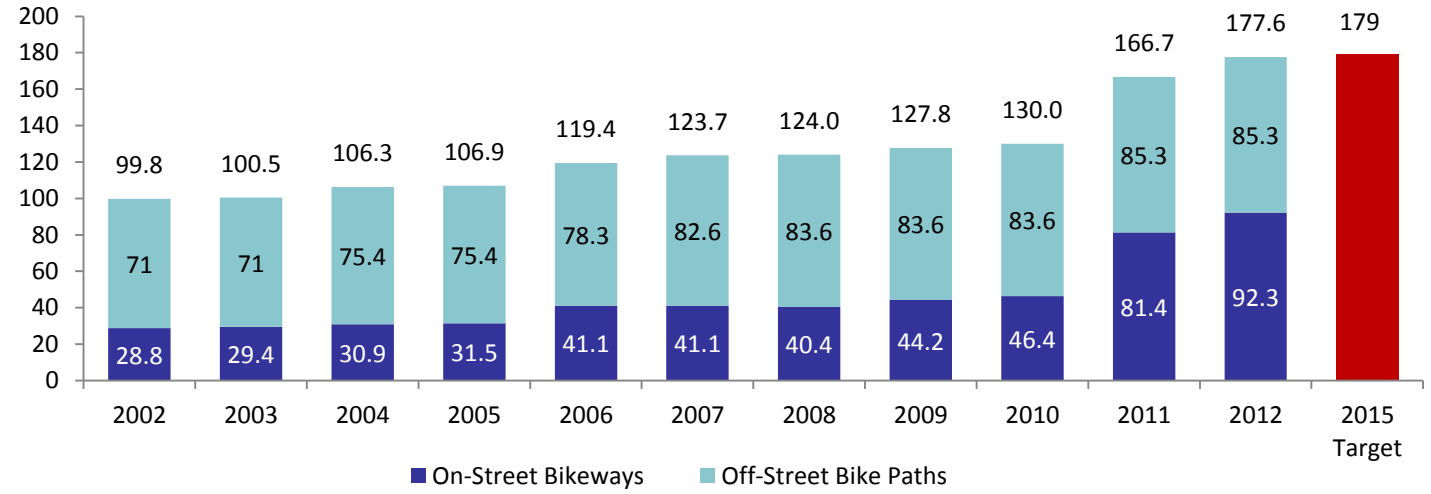
Why are these measures important?

The pilot source-separated organics collection program provides information to access whether this method of collection is viable city wide.

What will it take to achieve the targets?

An expansion of the pilot to additional areas would be needed to achieve the target. A contracted organics study will be completed by June 2013, to help identify options and impacts to determine the most viable alternative.

Miles of Bikeways



Target: Increase on-street lanes and off-street trails by a combined 55 miles from 2008 levels by 2015.
Source: Minneapolis Department of Public Works

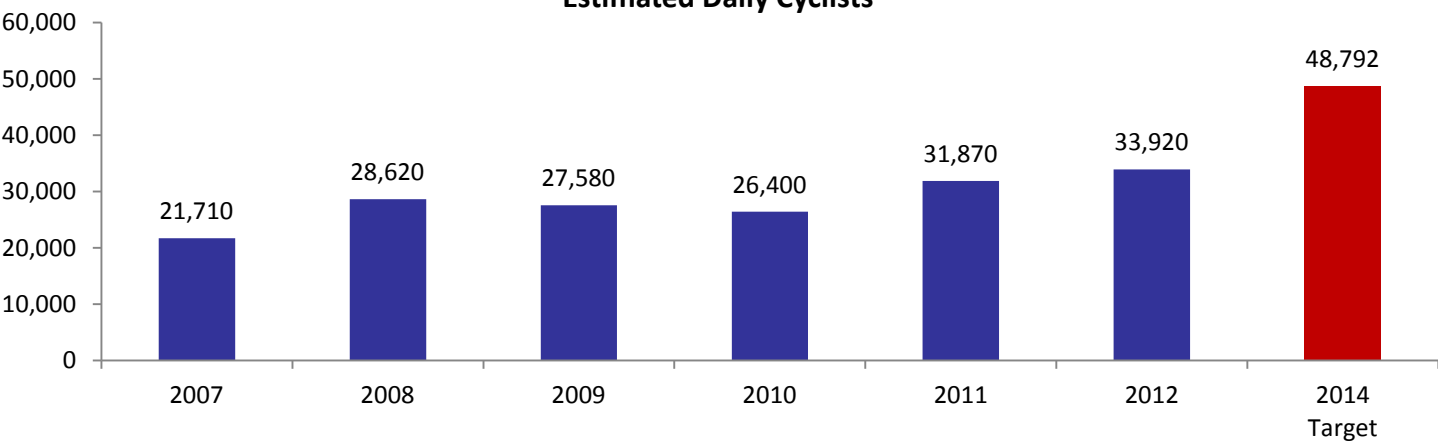
Why is this measure important?

Increasing bicycle use in Minneapolis can yield many benefits including lower greenhouse gas emissions, lower maintenance costs for roadways, decreased traffic congestion and a healthier population. Bicycling is also an efficient way to get around Minneapolis and can be faster than other modes of transportation for short trips. Providing residents, workers and visitors with transportation options, including bicycling, can increase mobility and improve access.

What will it take to achieve the target?

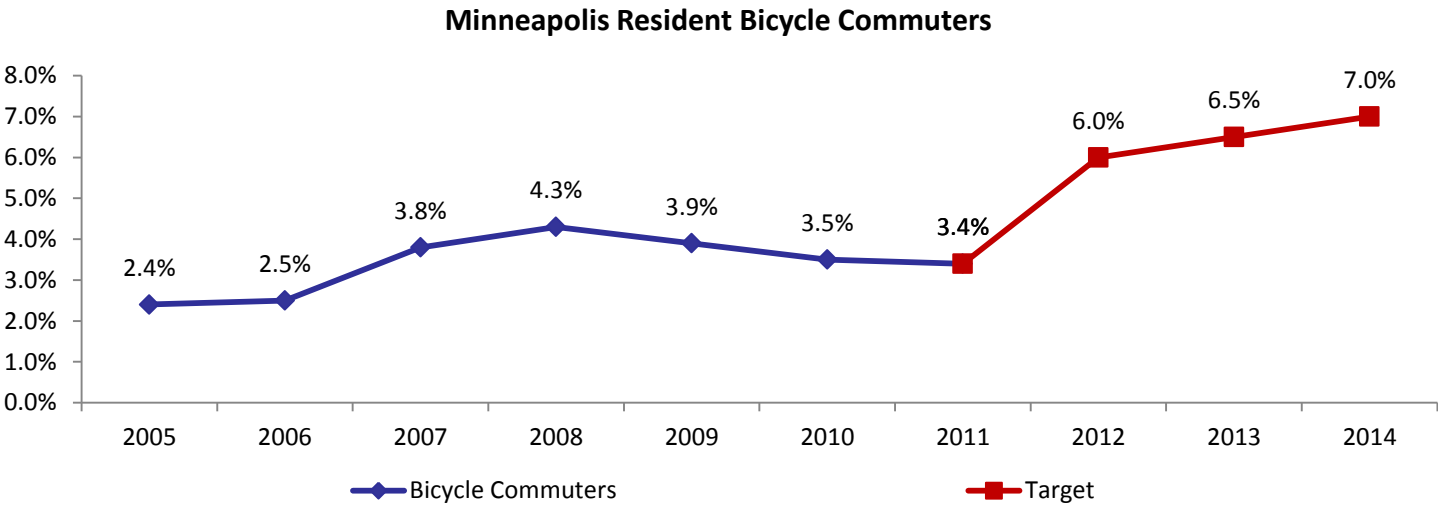
- Implement comfortable bikeways that can attract a wide range of bicyclists;
- Fill critical gaps in the bikeway network;
- Reduce actual and perceived bicycle safety issues;
- Provide secure parking options for bicyclists; and
- Educate all road users about how to safely share the road.

Estimated Daily Cyclists

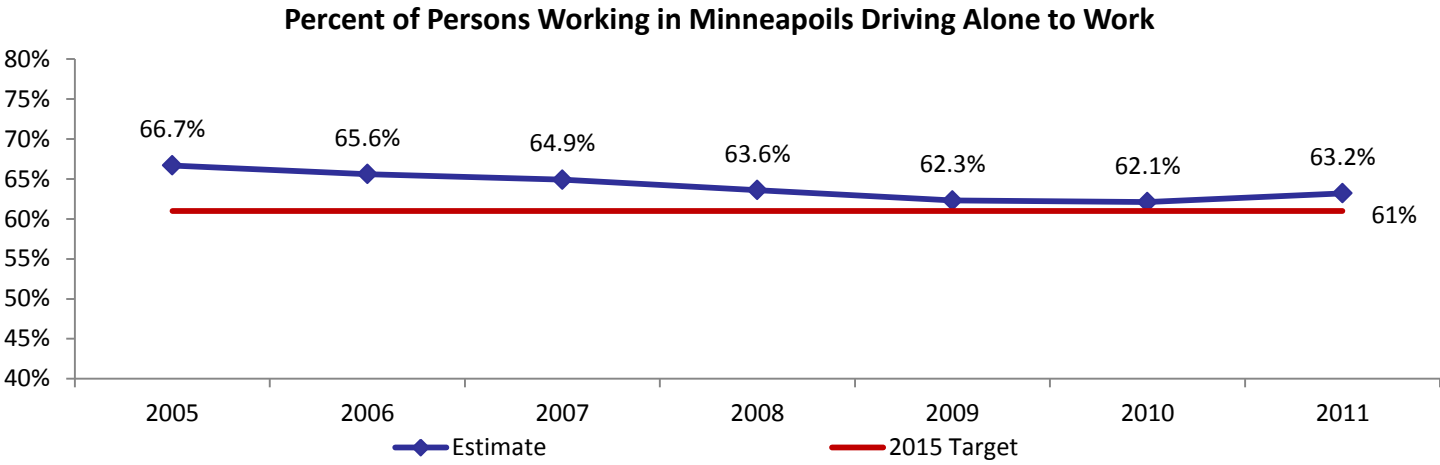


Target: Increase the number of cyclists measured in bike counts (at the same locations at which bike counts have been taken) by 60 percent over the 2008 baseline by 2014, with a milestone of 30 percent by 2011.
Source: Minneapolis Department of Public Works

Additional Data on Next Page…



Target: Reach a bicycling mode share of seven percent by 2014, with a milestone of six percent by 2012
Source: U.S. Census Bureau American Community Survey
Note: The average margin of error is +/- 0.6 percent.



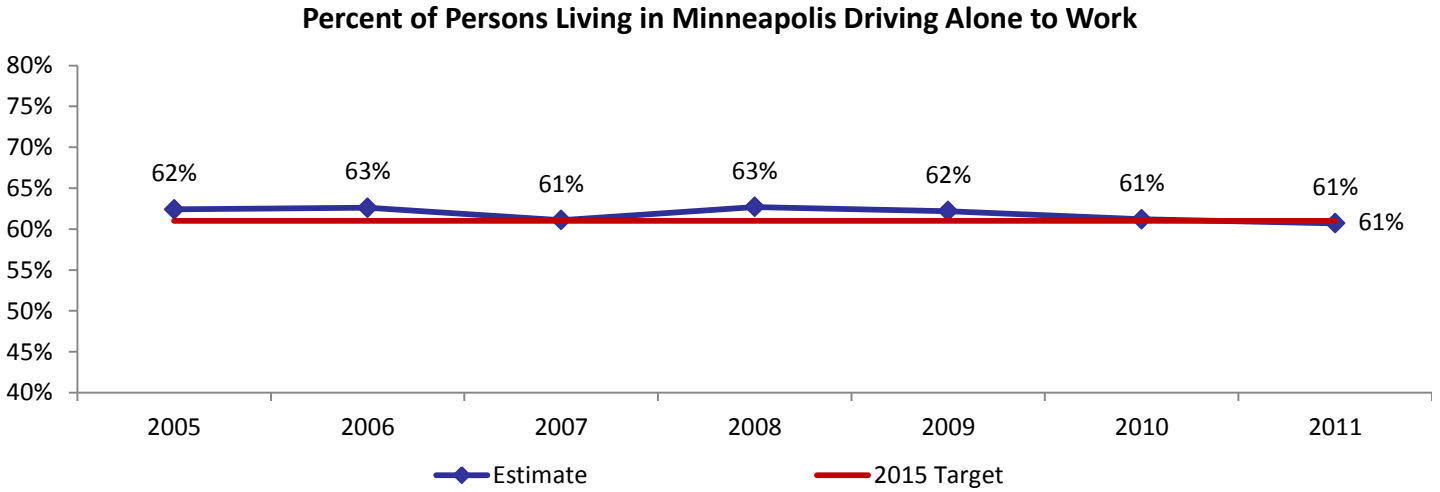
Target: Reduce the percentage of Minneapolis workers who drive alone to work to 61 percent by 2015.
Source: U.S. Census Bureau American Community Survey
Note: The Margin of Error ranges on average is 2.2 percent

Why is this measure important?

Using transportation other than driving is good for our health, budgets and environment. Alternative transportation options include taking the bus or train, carpooling, bicycling and walking. The City plays an important role in making transit affordable and convenient, creating dynamic urban corridors that are safe and accessible for pedestrians and bicyclists and promoting alternative transportation.

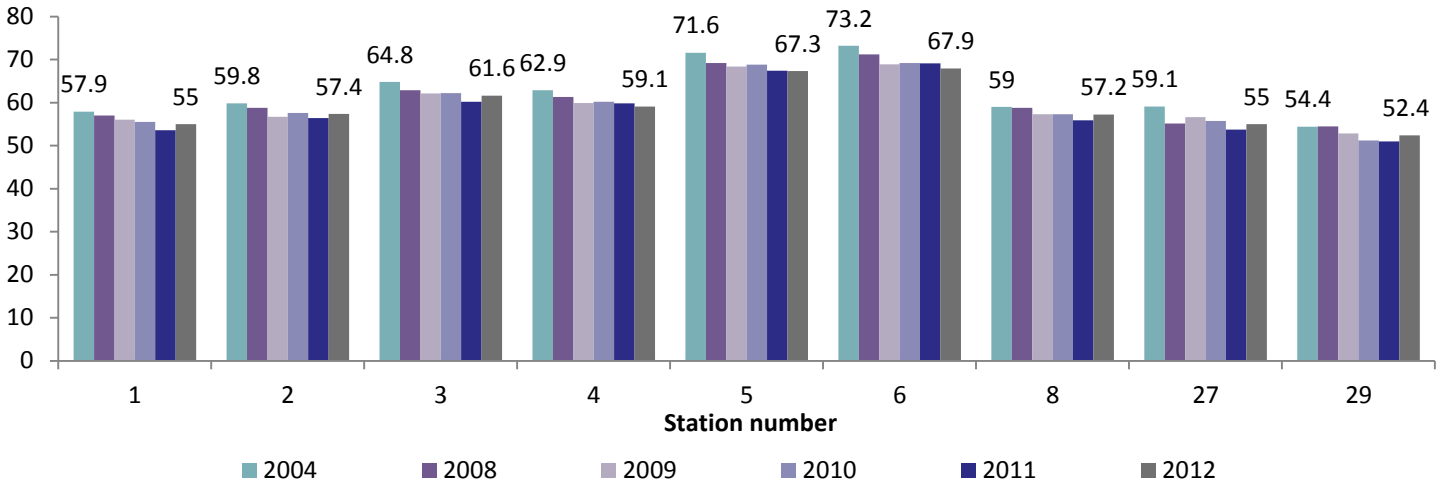
What will it take to achieve the target?

- Implementation of planned regional light rail and highway bus rapid transit lines on the Green (Central and Southwest LRT), Blue (Bottineau LRT) and Orange (I-35W Highway BRT) lines.
- Introduction of new modern streetcar and arterial bus rapid transit lines in existing high-demand urban corridors.
- Continued investment in bicycle facilities and outreach and education.
- Regional population and employment growth in areas well-served by transit, bicycling and walking.



Target: Reduce the percentage of Minneapolis residents who drive alone to work to 61 percent in 2015.
Source: U.S. Census Bureau American Community Survey
Note: The Margin of Error ranges on average is 2.6 percent

Average Noise Levels at Minneapolis Monitoring Stations in Decibels



Target: By 2015, reduce the average noise levels by at least three decibels, the minimum change that is perceptive to the average person's ear, from 2004 levels at all nine monitored locations in Minneapolis.
Source: Metropolitan Airports Commission

Why is this measure important?

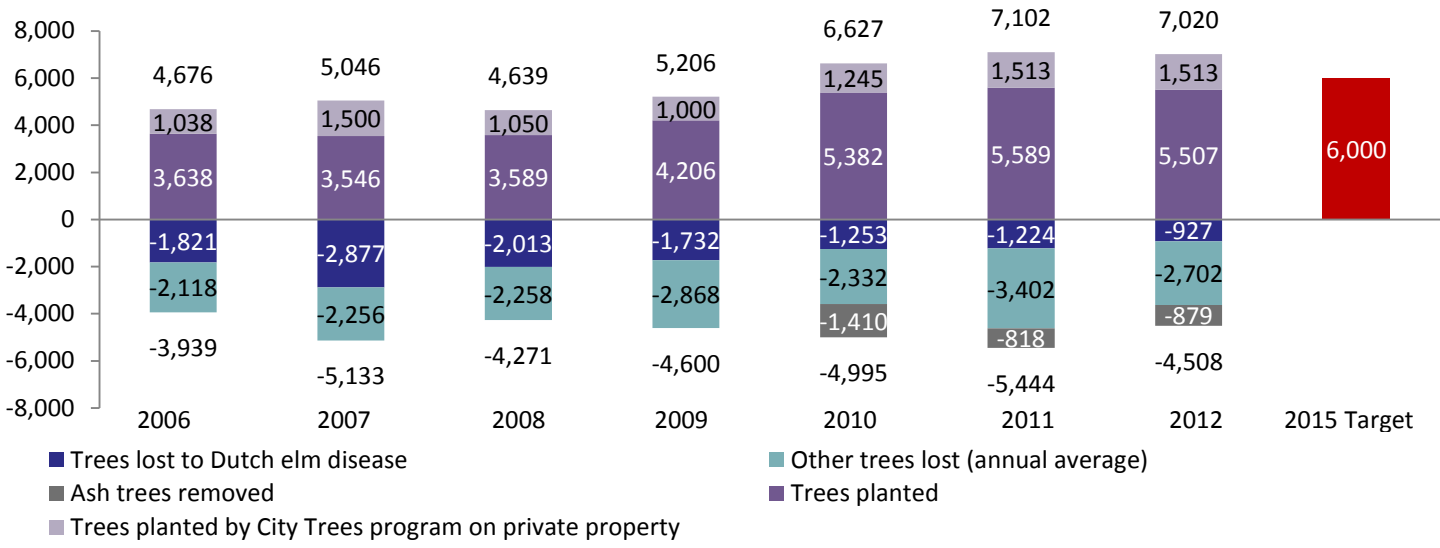
The Minneapolis-St. Paul International Airport (MSP) continues to be one of the 20 busiest airports in the U.S. and one of the 30 busiest airports in the world (measured by the number of passengers). MSP provides global access to a significant number of business and leisure travelers in the area, but it also impacts the environment, producing noise and air pollution that affect the nearby residents' quality of life.

What will it take to make progress?

All of the traffic from MSP is controlled by the FAA, but the city has been working with FAA officials in making suggestions for how to fan out flights, helping spread out the noise footprint. Projections are for the total number of enplanements to increase, but the fleet mix being projected by the major airlines at MSP may actually lead to fewer operations. Minneapolis city staff could be utilized to monitor operations and work with the FAA to reduce noise over incompatible land uses.

See Map in Appendix p. 28

Trees Lost and Trees Planted on Boulevards and in Public Parks



Target: Plant at least 6,000 trees on public land annually by 2015.
Source: Minneapolis Park & Recreation Board

Why are these measures important?

Our urban forest cleans the air, shelters wildlife, reduces storm water runoff, reduces the urban heat island effect, reduces cooling and heating costs for our homes, provides us with food and makes our city more beautiful. Protecting our urban forest is a challenge, with climate change, insects, disease and construction often killing more trees than we plant. A new threat is the emerald ash borer (EAB), an invasive beetle that kills ash trees, discovered in the city in 2010 with two other recently confirmed sites in the city. With nothing proven to stop it, emerald ash borer is poised to destroy 22 percent of all trees in Minneapolis (there are approximately 175,000 ash trees on private property and 38,000 on public property, including parks and streets).

What will it take to achieve the targets?

In 2012, the Minneapolis Park and Recreation Board planted over 5,500 trees. Since 2006, the MPRB has planted an average of 4,500 trees per year for a total of more than 31,000 trees along streets and in parks. Even with these public plantings, however, there has still been a net loss of almost 1,500 public trees in the city over the past seven years. In response, the City has helped property owners plant almost 9,000 trees-on private land since 2006 through the CityTrees program.

The 2009 Tree Canopy Study which mapped a 31.5 percent tree canopy has not been updated due to lack of funds.

Priority strategies for maintaining a healthy tree canopy include:

- Develop and implement EAB Strategy. In order to avoid a crisis situation, the Minneapolis Tree Advisory Committee is recommending that the Park Board begin removing 5,000 ash trees per year, starting in 2013. These will include smaller and less healthy trees, trees under power lines, and up to one-fifth of the trees on any residential block.
- Reinforce investment in tree plantings with commitment to increased watering.
- Continue to plant at least 5,000 new public trees per year with an emphasis on large tree species and increased diversity. Additional funding will be required to keep up with replacements of boulevard ash trees.
- Emphasize the desire for public/private partnerships for all of the priorities identified above. A recent example is the Downtown Council's new formed Tree Subcommittee, the private funding for trees in the North Minneapolis tornado area and the Longfellow program to get trees planted on private property that is just getting underway.
- Outreach and education for property owners on not only planting trees but proper maintenance as well.

Measure in Development

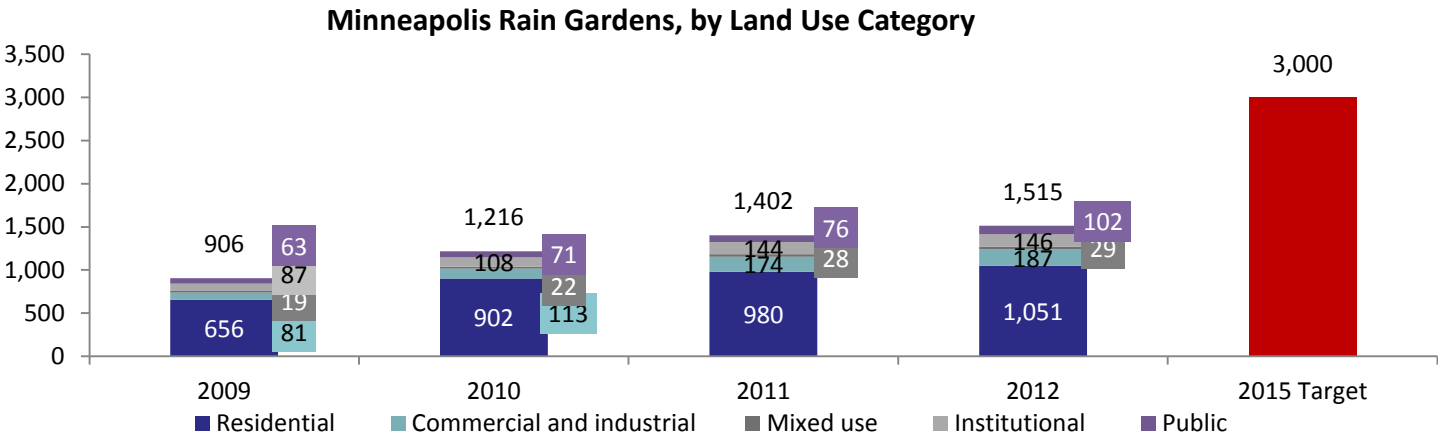
Target
Reduce pollutants in stormwater runoff, establish measurements of amounts being reduced, and determine the city's allocations of the reductions needed to bring impaired water bodies into compliance, all by 2015.

Why is this measure important?
The City has Total Maximum Daily Load (TMDL) responsibilities under its National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit, required under the Clean Water Act. The federal Act requires states to adopt water quality standards to protect waters from pollution. The goal is to protect high-quality waters and improve the quality of impaired waters, so that beneficial uses (such as fishing, swimming and protection of aquatic life) are maintained and restored, where these uses are attainable.

The state's process includes the following steps: Assess waters, determine whether impaired, place water on the impaired list, monitor and study the water body, complete a pollutant load allocation formula (called a "Total Maximum Daily Load"), develop a restoration strategy, implement the strategy, monitor changes in water quality, and then de-list if standards are being achieved, or determine next steps. The list of impaired water bodies, or 303(d) List, is updated every two years.

What will it take to achieve the target?
Measurements and allocations are determined through stormwater-related impairment studies call TMDL Reports. Ten of the studies have been initiated to date, and six of them have been completed. This means that the city's allocations of needed pollutant reductions have been calculated, and the City and the MPRB are now tracking progress toward the reductions. The studies also determined that two water bodies – Brownie Lake and Powderhorn Lake – could be removed from the state list of impaired waters due to successful clean-up efforts.

The city's responsibilities are specific to the pollutant load in the stormwater that discharges to the receiving water, referred to the Waste Load Allocation. In many cases, it will be many years, if ever, before impaired waters have been sufficiently improved to be de-listed (removed from the impaired status). The city's process includes the following steps: Before the TMDL Report has been finalized and approved by the EPA, it is essential that city staff provide early and significant involvement in the TMDL process, work to ensure that the allocations assigned to the city are equitable and grounded in science, and work to ensure that implementation steps are identified that are feasible, constructible, cost effective and consistent with city and MPRB objectives. After the TMDL Report has been finalized and approved by the EPA, the city must show continuous progress toward achieving the Waste Load Allocation. Implementation steps may include structural improvements (e.g., infiltration projects, ponds, pipe cleaning/rehabilitation) or non-structural practices (e.g., street sweeping, ordinances to prevent pollution at the source, enforcing ordinances). More information can be found in the city's Stormwater Management Program.



Target: Increase the number of rain gardens to 3,000 and identify their land use (residential, commercial and industrial, or institutional and public) by 2015.
Source: Minneapolis Public Works

Why is this measure important?
A developed city has roadways, rooftops, parking lots and other impervious surfaces that prevent rain from soaking into the soil. Rain that falls on these hard surfaces accumulates, picks up pollutants as it flows and is referred to as stormwater runoff. Controlling and reducing stormwater runoff and pollutants is required by the federal Clean Water Act.

It is not feasible to remove or reduce the impervious surfaces to a great degree, because the density of housing, businesses and institutions is important to a convenient live-work-play-learn environment, and the urban street network is important to convenient circulation for vehicles, bikes and pedestrians. However, where runoff from hard surfaces can be directed to areas that allow rain to soak into the soil, then runoff volume and pollutants are incrementally addressed. Keeping track of these infiltration areas or "rain gardens," and encouraging new ones at all types of properties – whether residential, commercial/industrial, institutional and public – makes small but steady progress toward addressing stormwater runoff problems. Knowledge of rain gardens also helps to educate residents, owners and property managers about the root causes of stormwater runoff problems. Other strategies include wetland areas, grassy swales, pervious pavers, underground treatment chambers and street sweeping.

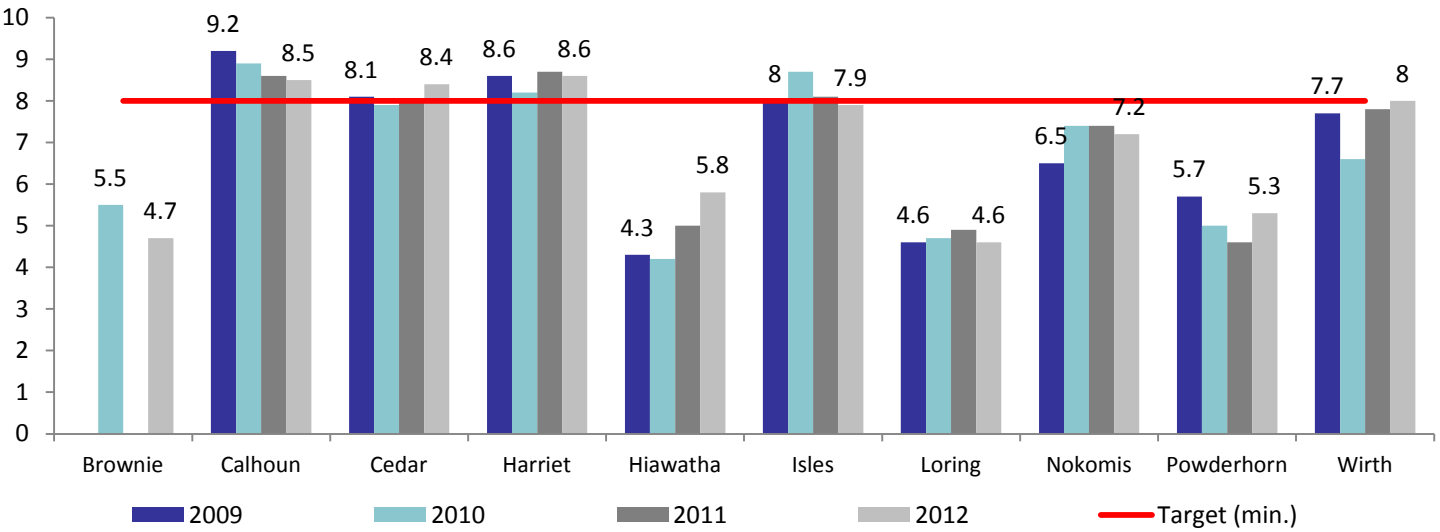
What will it take to achieve the target?
Progress toward the targets is achieved by the following programs:

- Residential: The majority of new residential rain gardens are the consequence of the city's sponsorship of Rain Garden Workshops, held annually by MetroBlooms. Some are the consequence of the city's Stormwater Utility Credit Program.

- Commercial/Industrial, Mixed Use, and Institutional: The majority of these rain gardens are the result of development/redevelopment projects captured under the city's Stormwater Management Ordinance, MCO Chapter 54. Occasionally owners of these properties install rain gardens because of the city's Stormwater Utility Credit Program.

- Public: Some new public rain gardens are constructed as part of redevelopment projects by entities such as MPRB, under the Stormwater Management Ordinance. Others are part of Public Works projects related to flood areas, combined sewer overflows, and other capital project needs. Occasionally rain garden or other infiltration practices are compatible with street projects.

Lake Aesthetic and user Recreation Index (LAURI) Average



Target: Every Minneapolis lake is rated and receives a ranking of eight, nine, or 10 (with 10 being excellent) on the Lake Aesthetic and User Recreation Index (LAURI) by 2014.
Source: Minneapolis Park and Recreation Board

Why is this measure important?

The LAURI* was developed to provide recreational users with an additional source of information about the status of MPRB lakes. Aesthetics can be difficult to evaluate since they are dependent on one's own experience and preferences. But LAURI provides lake users with an easily understandable recreational suitability indicator for MPRB lakes that incorporates aesthetics and the health of the lake. Data is collected during the growing season (May to September).

The LAURI has five indices:

- **Public Health** (*E. coli* measured at public swimming beaches)
- **Water Quality** (water clarity/Secchi depth)
- **Habitat Quality** (aquatic plant and fish diversity)
- **Recreational Access** (availability and ease of public access)
- **Aesthetic Considerations** (color and odor of water, garbage and debris)

The LAURI has proven to be useful to users of the Minneapolis park system. Someone interested in walking or biking around a lake may use only the aesthetic score. A swimmer may compare lakes based on the public health, aquatic plant, aesthetic, and water quality scores. A sailor or kayak user may be primarily concerned with the recreational access score.

Aquatic invasive species (AIS) threaten native plants and animals, which in turn change the lake's ecology. These changes can significantly interfere with both the beauty and recreational use of lakes.

What will it take to make progress?

Our lakes face a multitude of problems and stressors. Invasive species are often the most visible sign of change in lakes and many problem species are very difficult to remove or even limit. The MPRB, in cooperation with various state agencies, carefully monitors for these species and their distribution toward limiting their spread where possible.

Additional Data and Narrative on Next Page…

Our lakes also face nutrient overload from stormwater runoff. While nutrients are necessary for life, too much can choke our lakes with algae reducing water clarity and oxygen levels. This can also inhibit the growth of aquatic plants which are important for good habitat and water quality. The MPRB works closely with Minneapolis Public Works to reduce nutrient loading to lakes at every available opportunity. Human activities around the lakes can also lead to water contamination. Wastes from pets and improper disposal of wastes to storm sewers can cause problems for human health and beaches and where people are in contact with the water.

MPRB tests water for an indicator bacteria called E. *coli*. Beaches are sampled weekly to determine if bacteria levels are within Minnesota state guidelines. Indicator organisms are tested because high levels of certain types of bacteria may indicate that disease-causing bacteria could be present.

The best way to manage AIS is to keep them out of water bodies in the first place. Once AIS enter a water body, they are extremely difficult, if not impossible, to remove. The MPRB's goal is to delay the introduction of AIS into Minneapolis water bodies as long as possible in hope that techniques are developed to control or reduce their impacts before they enter Minneapolis water bodies.

The actions include requiring an inspection for AIS before a person launches any water-related equipment at the boat launches on Lake Calhoun, Lake Harriet and Lake Nokomis. Inspectors will be on duty at each boat launch seven days a week during park hours of 6 am to 10 pm from April 15 through December 1. The public boat launches will be locked during non-launch hours.

Additionally, MPRB will add signage and additional trash receptacles to encourage proper bait disposal at launches, fishing docks and high-use shoreline fishing areas across the park system, increase AIS education and outreach efforts as well as undertake several other additional prevention measures.

Beach Closures

Lake	2007	2008	2009	2010	2011	2012
Calhoun				'8/30 (Thomas)	7/11 (Thomas)	
Cedar				'8/9 (Point)		
Harriet						6/12 - 6/14(Southeast)
Hiawatha	'7/9			'7/20 - 8/2	'8/8 - end of season	
Nokomis		'7/21 - 7/24 * (Main & East)				
Wirth				'8/10 - end of season	'Closed all season **	8/28 - 8/30

Target: Achieve zero beach closings annually.
*Nokomis 50th and Main were closed 7/21/2008 - 7/24/2008 as a precautionary measure after a portable bathroom was tipped and spilled through a storm sewer at Lake Nokomis. Tests did not indicate elevated bacteria levels.
** Wirth was closed for construction and due to tornado damage in 2011.
Source: Minneapolis Park and Recreation Board

*The LAURI measures: 1) public health status at swimming beaches; 2) water quality including clarity; 3) aesthetics such as color, odor, and debris; 4) availability and ease of public access for recreational uses; and 5) habitat quality for plant and fish diversity. These five indices are scored on a scale of one to 10.

Additional Data on Next Page…

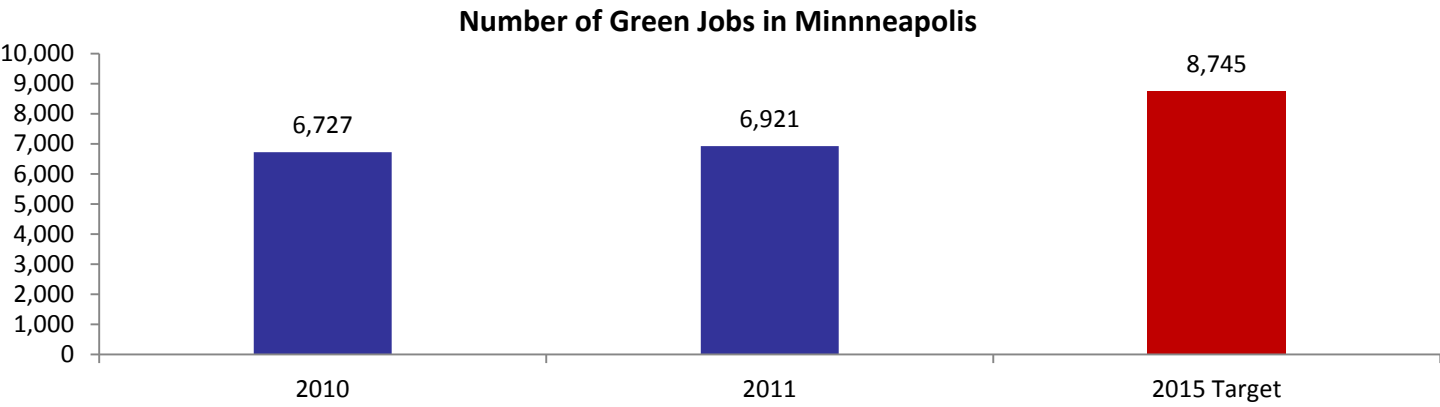
Minneapolis Known Present Aquatic Invasive Species

*Lake**	2009	2010	2011	2012
Birch Pond				
Brownie Lake	M, CLP	M, CLP	M, CLP	M, Carp
Lake Calhoun	M, CLP	M, CLP	M, CLP	M, CLP, Carp
Cedar Lake	M, CLP	M, CLP	M, CLP	M, CLP, Carp
Diamond Lake	CLP	CLP		CLP, Carp
Grass Lake				S
Lake Harriet	M, CLP	M, CLP	M, CLP	M, CLP, Carp
Lake Hiawatha	M, CLP	M, CLP, ZM**	M, CLP, ZM**	M, CLP, ZM**, Carp
Lake of the Isles	M, CLP	M, CLP	M, CLP	M, CLP, Carp
Loring Pond	CLP, S	CLP, S	CLP, S	CLP, S, G
Lake Nokomis	M	M, ZM**	M, ZM**	CLP, M, ZM**
Powderhorn Lake	BWW***, S	BWW***, S	BWW***, S	CLP, BWW***, S, G
Ryan Lake				
Spring Lake	M	M	M	M
Webber Pond	S	S	S	S
Wirth Lake	M, CLP	M, CLP	M	M, CLP, Carp

Target: Prevent the spread and introduction of aquatic invasive species in water bodies.

Key
M: Milfoil (Eurasian Watermilfoil)
CLP: Curly Leaf Pondweed
ZM: Zebra Mussels
BWW: Brazilian Water Weed (Brazilian Elodea or *Egeria densa*)
S: Chinese and Banded Mystery Snails
* Some data not available for Birch Pond, Grass Lake, Ryan Lake, and Spring Lake.
** Declared infested; no zebra mussels have been found.
*** Species found in 2007; chemically treated. Has not been found since.

Source: Minneapolis Parks and Recreation Board



Target: Achieve 30 percent growth in green jobs in Minneapolis by 2015 using 2010 as a baseline.
Sources: Quarterly Census of Employment and Wages, Bureau of Labor Statistics, and CPED Research
Note: To see industry breakdown please see Appendix p. 30

Why are these measures important?

Our growing green economy provides job opportunities for workers with a wide range of skills in areas such as: energy efficiency, renewable energy, green building, green chemistry, recycling, water processing and sustainable transportation. Green businesses and green jobs achieve a triple bottom line of sustainability – environment, economy and equity. By focusing on growing the green economy, we can support the growth of well-paying jobs for unemployed or underemployed Minneapolis residents while lessening the impact of economic development on the environment.

- **Environment** – Green businesses and jobs produce goods and provide services that benefit the environment and conserve natural resources. Green jobs are also responsible for making a business' operations and production processes more energy/resource efficient, reducing environmental impacts.

- **Economy** – Green industries comprise a growing segment of our local economy, as domestic and global demand for green products and services continues to expand. Also, businesses that green their operations deploy energy- and resource-saving solutions that improve their financial bottom line.

- **Equity** – By linking our green economic development efforts to workforce training and placement, we can ensure that the growth in jobs benefits unemployed and underemployed Minneapolis residents.

What will it take to achieve our targets?

1) Leverage City opportunities to drive demand for green products and services.

The City's **Environmental Purchasing Policy** (EPP), adopted in 2009, has successfully driven demand for green office supplies, growing from 19 percent to 70 percent from 2009 to 2012. However, overall in 2012, City purchases from businesses listed in the Twin Cities Green Product and Service Directory totaled less than $70,000, amounting to 1 percent of total annual City procurement expenditures. Clearly, the City can buy more from local green businesses. One way that City staff is creating new connections is by inviting local green product companies, such as LED lighting manufacturers, to

Additional Data and Narrative on Next Page…

present to the City's Environmental Purchasing Committee and do pilot projects with City departments.

CPED is promoting the **Twin Cities Green Product and Service Directory** as a resource for learning about and purchasing from local green businesses. CPED tested a new provision in our workforce agreements with developers that encourages sourcing of green products and services from local companies, using the Directory as a guide. In the American Swedish Institute expansion, the contractor sourced products and services from ten green companies located in the metro area, including low-emitting paints (Valspar) and energy modeling services (Weidt Group). In the American Academy of Neurology project, the contractor sourced products and services from six green companies in the metro, including bike racks (Dero) and construction waste recycling services (Atomic Recycling).

Green Building – In 2010, the City and other partners set a goal to reduce energy consumption in 50 percent of all buildings in Minneapolis and Saint Paul over ten years. Toward that end, the City, along with our partners, have developed policies, programs and resources to expand markets for green building, energy efficient upgrades and energy services.

- The recently adopted **Building Energy Benchmarking and Disclosure Policy** for commercial and government buildings in Minneapolis is expected to generate demand for energy efficient building upgrades and grow jobs in the energy services sector.

- The City partnered with MIT CoLab's Green Economic Development Initiative to assess and develop strategies for the **operational energy savings** (OES) sector in the Minneapolis-St. Paul metro area. OES includes services such as building commissioning that can realize deep energy savings and significant financial returns. The effort resulted in a published report detailing the opportunity and recommending implementation strategies, a City-hosted industry stakeholder forum, and a City-led launch of the implementation phase.

- **Energy efficiency programs** such as the City's Energy Efficiency Business Loan Program, the Trillion BTU Loan Program, the Kilowatt Crackdown (with Xcel and BOMA) and Community Energy Services (CES-Center for Energy and Environment) are facilitating energy efficiency upgrades of commercial and residential properties throughout Minneapolis. Since 2011, it is estimated that about 47 jobs have been created or retained through three City-sponsored/supported energy retrofit programs (Trillion BTU, CES, and the City's Energy Efficiency Business Loan Program).

- City-led initiatives such as **Green Homes North** and the **North Minneapolis Business Toolbox** (under development) include a green design/construction focus. The City provided Green Homes North developers with a customized business directory for residential construction products and services, and hosted an expo event for green businesses, contractors and developers.

2) Incorporate a triple bottom line and lens in City initiatives.

Minneapolis Green Homes North (GHN) Program – The goal is to build 100 sustainably designed homes on City-owned vacant properties in North Minneapolis.

Additional Data and Narrative on Next Page…

- **Environment** – incorporate green design standards
- **Economy** – source green building materials and services from local businesses.
- **Equity** – create job opportunities for local residents and minority and women-owned businesses. Minneapolis' RENEW program is training lower income workers in green construction trades to work with GHN developers and contractors.

North Minneapolis Business and Job Recruitment Toolbox – CPED is proposing a financing toolbox for businesses that create new jobs in, and hire from North Minneapolis and build or renovate to green building standards.

3) Connecting green businesses with resources to help them grow and thrive, and targeting industry sectors with strong growth potential.

City staff are actively calling on local green businesses to better understand their needs and assess opportunities to support and grow the green industry sector. Staff are connecting these businesses with a variety of programs, services and resources including: low-interest financing, skilled "green collar" workers, real estate site search assistance, procurement opportunities, export assistance and networking opportunities with complementary businesses and organizations. Since 2011, Minneapolis has had a net gain of eight green manufacturing and green service companies that have moved into or started up in the city.

Green Chemistry – CPED staff are conducting industry analysis and developing strategies to support and grow our local cluster of green chemistry companies and the network of R&D, investment capital, and suppliers that support them. Green chemistry applications include biofuels and biobased products such as cleaners, plastic products, adhesives, and cosmetics that use natural, renewable inputs (e.g. agricultural byproducts) as a substitute for petroleum-based or toxic chemicals in the production process.

4) Train workers in green skill sets and match them with local employment opportunities.

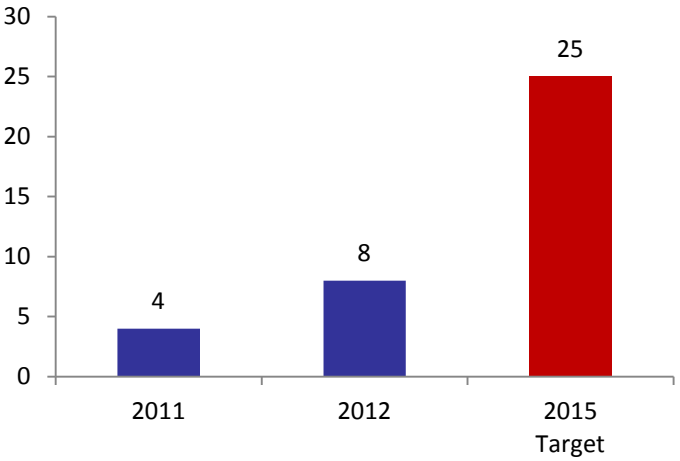
It is estimated that there were about 6,920 green jobs in Minneapolis in 2011. This represents an approximately 3 percent increase in green jobs in the city compared to a 2010 baseline estimate. The sectors with the largest estimated numbers of green jobs in Minneapolis include professional, scientific and technical services; manufacturing; and transportation and warehousing. Construction and transportation/warehousing have the largest overall percentages of green jobs by industry sector (10 percent and 13 percent respectively). (Sources: QCEW data, BLS green jobs survey data.)

RENEW, a City-led, federally funded green jobs training program that launched in 2010 has led to employment for more than 425 of 585 individuals trained in green credentialing programs in manufacturing, construction, building systems and renewable energy. Of the individuals trained through RENEW, 337 reside in Minneapolis.

In manufacturing and construction, two green job growth sectors identified through CPED's data analysis, RENEW has contributed significantly to those job counts. Through RENEW, 171 individuals completed training and certifications in sustainable manufacturing methods. In the construction industry, 177 individuals completed green building/construction courses and certifications. In 2012, RENEW also trained 35 workers in green construction trades to work with developers through the Minneapolis Green Homes North Program.

Additional Data on Next Page…

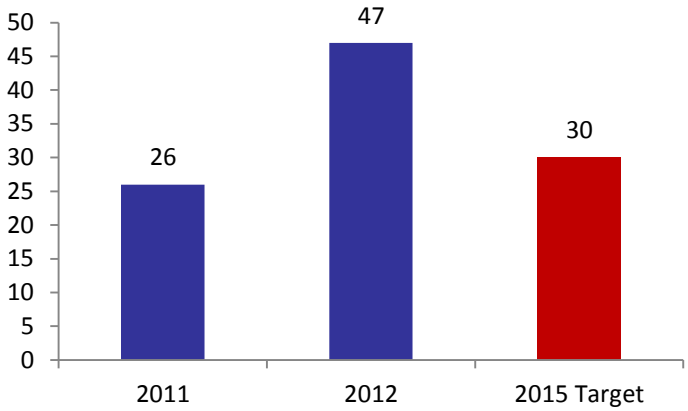
Net Gain of Green Businesses



Target: Achieve a net gain of 25 green manufacturing or service companies in Minneapolis by 2015 using 2011 as a baseline.

Source: CPED

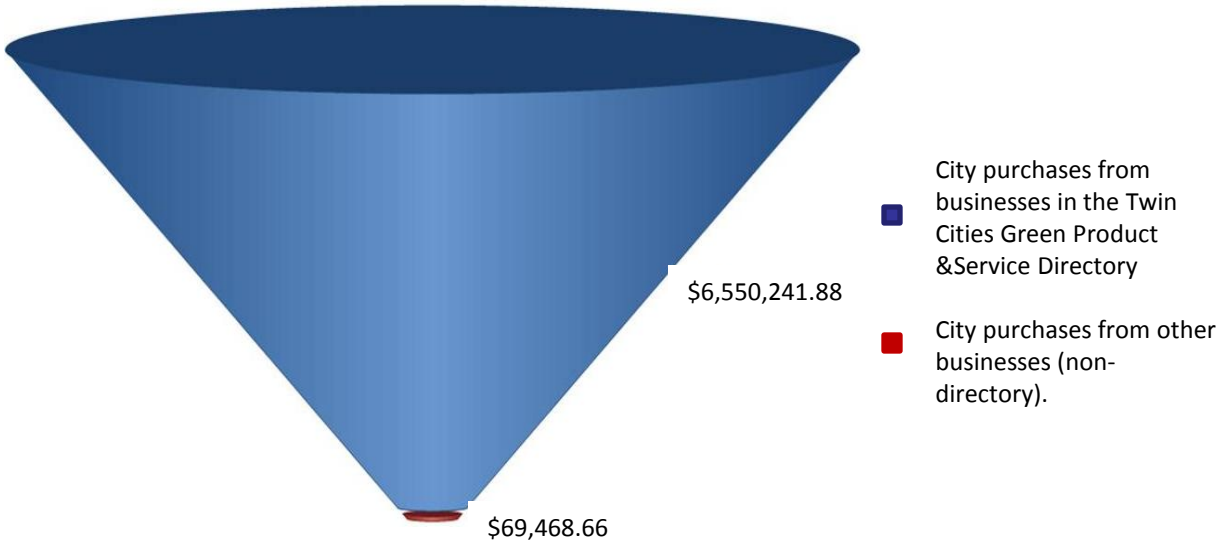
Jobs Through Building Retrofits



Target: Create 30 jobs through building retrofit efforts by 2015, including City energy efficiency financing, Community Energy Services and related programs using 2011 as a baseline.

Source: CPED

City Purchases From Local Green Vendors in 2012



Map on Next Page

Targets

1) All residents live within a quarter (1/4) mile of a healthy food choice.
2) Increase by one acre food producing gardens in the city by 2014 using 2011 as a baseline.

Why is this measure important?

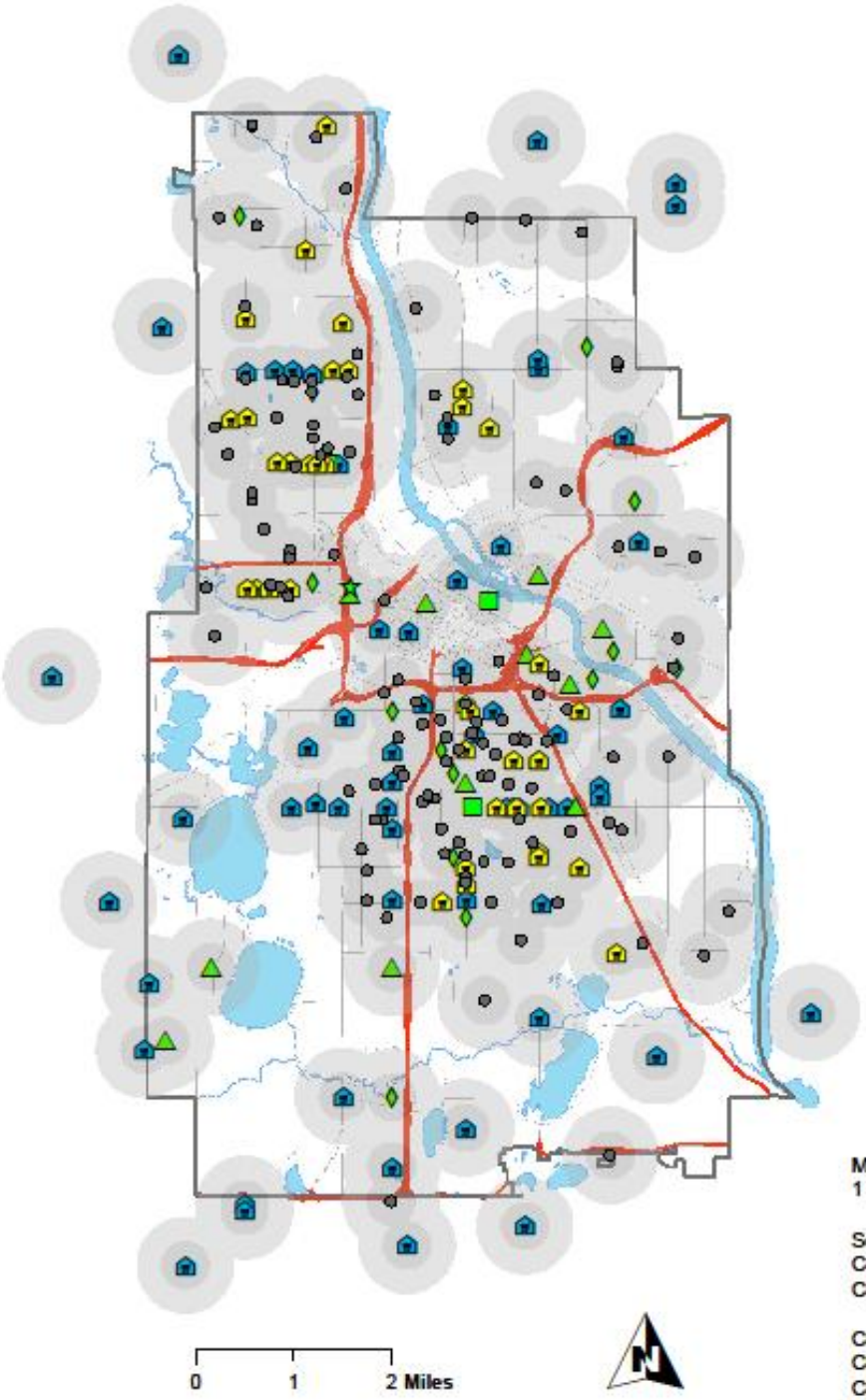
A socially, economically and ecologically sustainable food system supports and promotes the current and future health of individuals, communities and the natural environment. It requires infrastructure and networks that support the life cycle of food from production to waste recovery. It makes nutritious food accessible and affordable to all, increases food safety and security and is bio diverse and resilient. It is also humane and fair, protecting farmers, workers, consumers and communities.

What will it take to achieve this goal?

While the goal in principle has been met, there are still opportunities to improve healthy food access in Minneapolis. A periodic review of the regulatory framework that frames food production and access to healthy food illustrates several opportunities. 1) A revision to the Staple Food Ordinance that raises the current standards for stores that sell grocery items and support for corner stores so that they can procure and sell healthier foods. 2) A revision to the Grocereteria's ordinance which would allow mobile grocery stores and mobile farmers markets to operate. These mobile markets could operate in low healthy food access areas and with an EBT machine, provide needed healthy food options. The City needs to continue to support the Farm to School program efforts by the Minneapolis Public School system and the expansion of these efforts to charter, alternative and private schools. In the future, the Health Department hopes to continue their past work with childcare sites across the city where healthy eating habits are developed. In addition, ensuring use of EBT at farmers markets and healthy food at food shelves will also support this goal.

Future Goals: Because approximately 65 percent of Minneapolis residents live within a quarter mile of a grocery store, enhanced corner store, farmers market, or food-producing community garden and about 90 percent of Minneapolitans live within a half mile of these food outlets, this goal may need to be revised in the future. Also an additional goal may involve economic development opportunities around a local food system.

Healthy Food Outlets in Minneapolis



Healthy Food Outlets

- Grocery Store
- Enhanced Corner Store
- Community Garden
- Farmers Market
- Mini Market
- Municipal Market
- Produce and Craft Market

Buffers

- Quarter Mile
- Half Mile

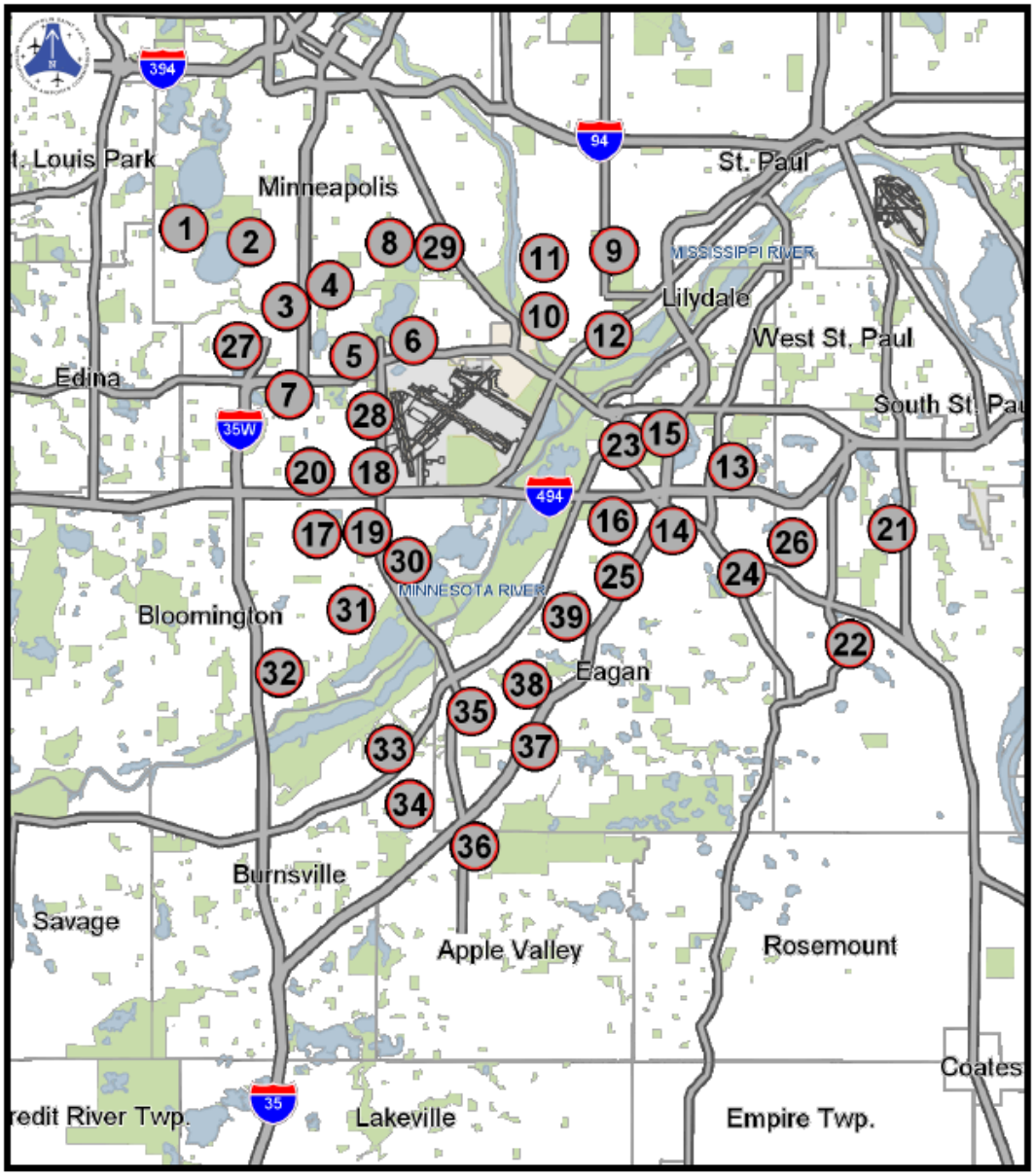
Map includes grocery stores up to 1 mile from city boundaries.

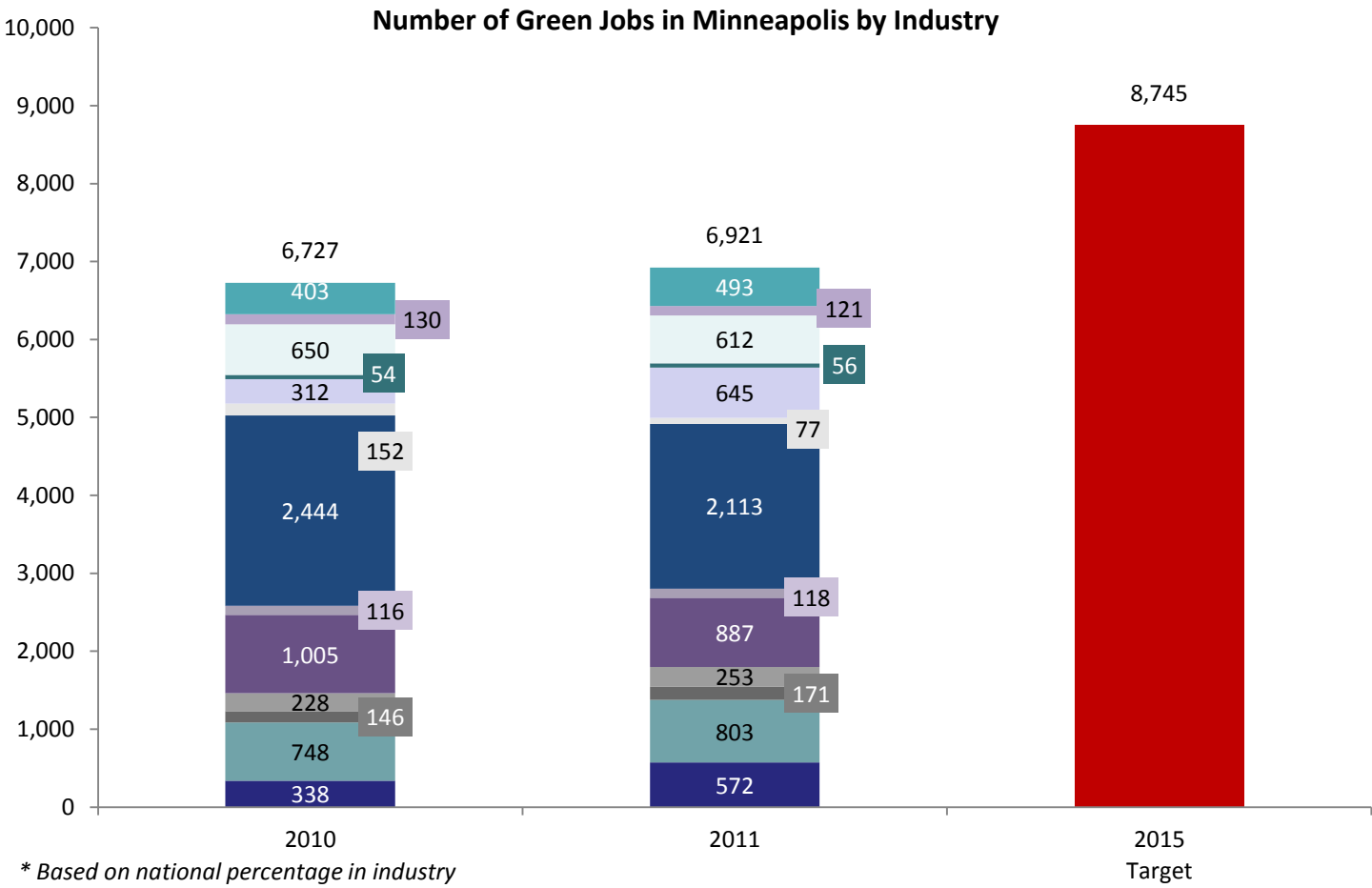
Sources: U.S. Census Bureau American Community Survey (2007-2011 Estimates), City of Minneapolis, Gardening Matters.

Created by:
City of Minneapolis - Sustainability
City Coordinator's Office
March 2013

Appendix

MSP International Airport
Remote Monitoring Tower (RMT) Site Locations





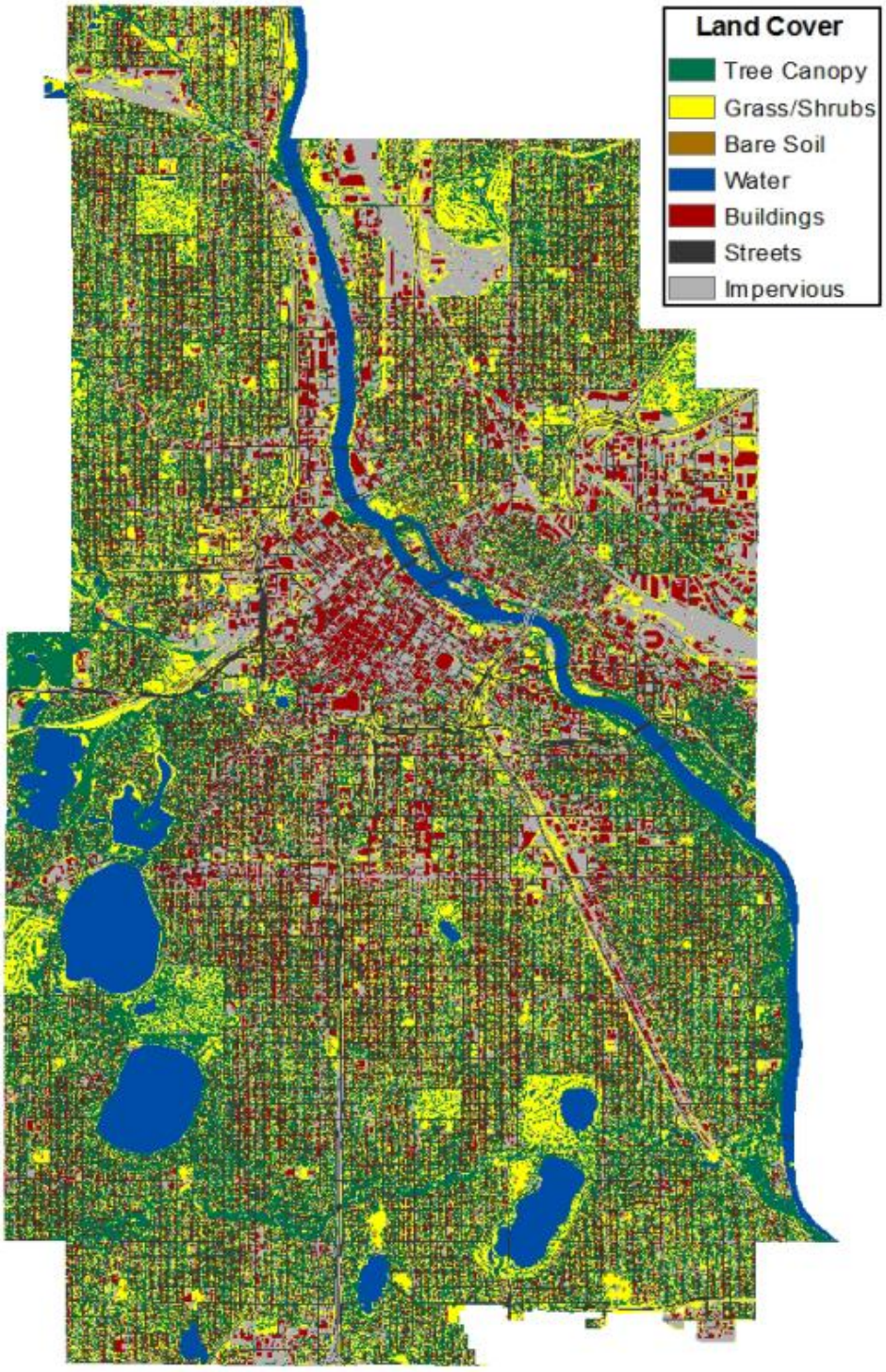
** Based on national percentage in industry*

Target: Achieve 30 percent growth in green jobs in Minneapolis by 2015 using 2010 as a baseline.

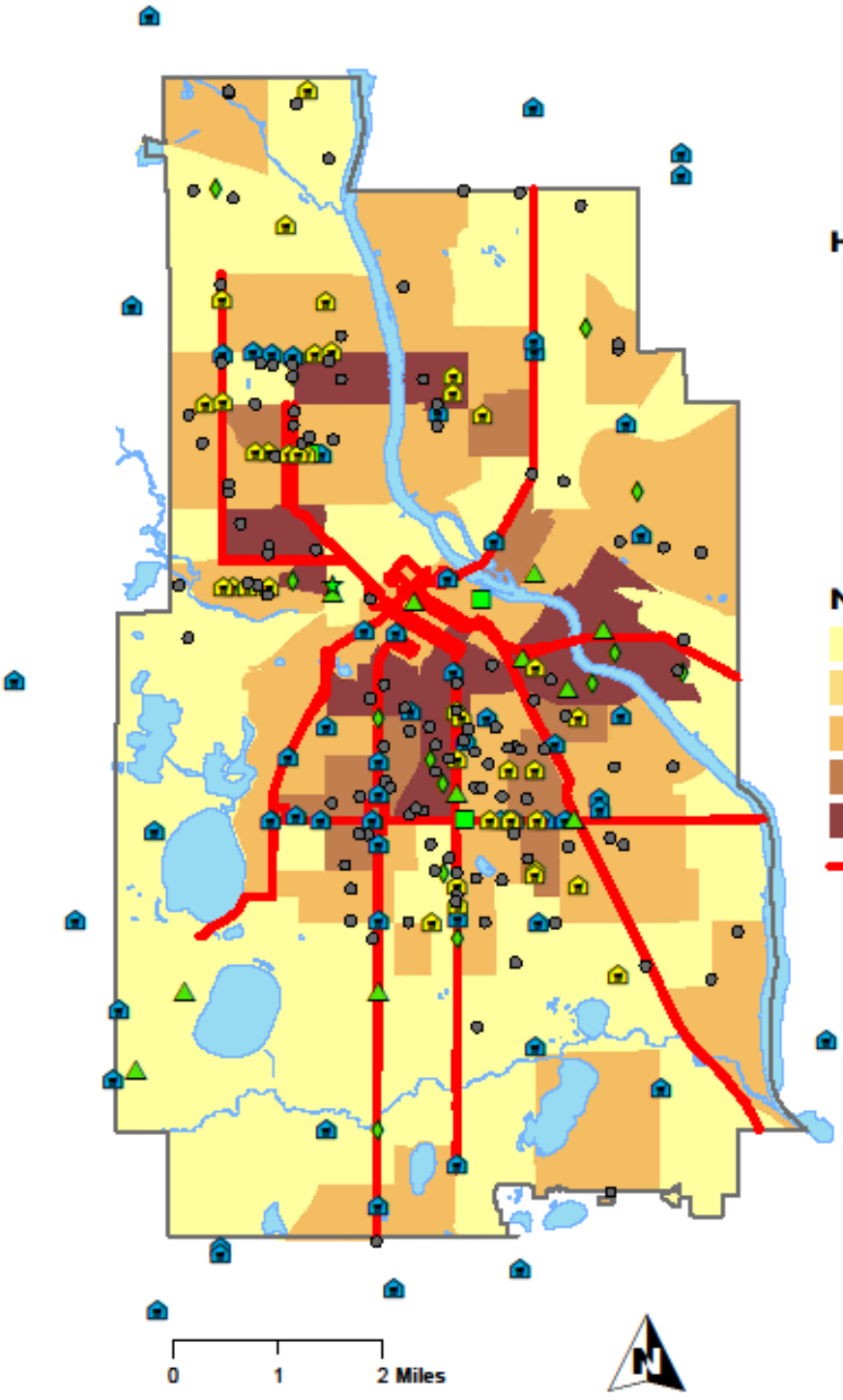
Sources: Quarterly Census of Employment and Wages, Bureau of Labor Statistics, and CPED Research

- Non-Private
- Other Services (except Public Administration)
- Administrative and Support and Waste Management and Remediation Services
- Leisure and Hospitality*
- Management of Companies and Enterprises*
- Education and Health Services*
- Professional, Scientific, and Technical Services
- Financial Activities*
- Information
- Transportation and Warehousing
- Trade
- Utilities
- Manufacturing
- Construction

2009 Minneapolis Land Coverage



Healthy Food Outlets, Vehicle Access, and High Frequency Transit in Minneapolis



Healthy Food Outlets

- Grocery Store
- Enhanced Corner Store
- Community Garden
- Farmers Market
- Mini Market
- Municipal Market
- Produce and Craft Market

No Access to a Vehicle (%)

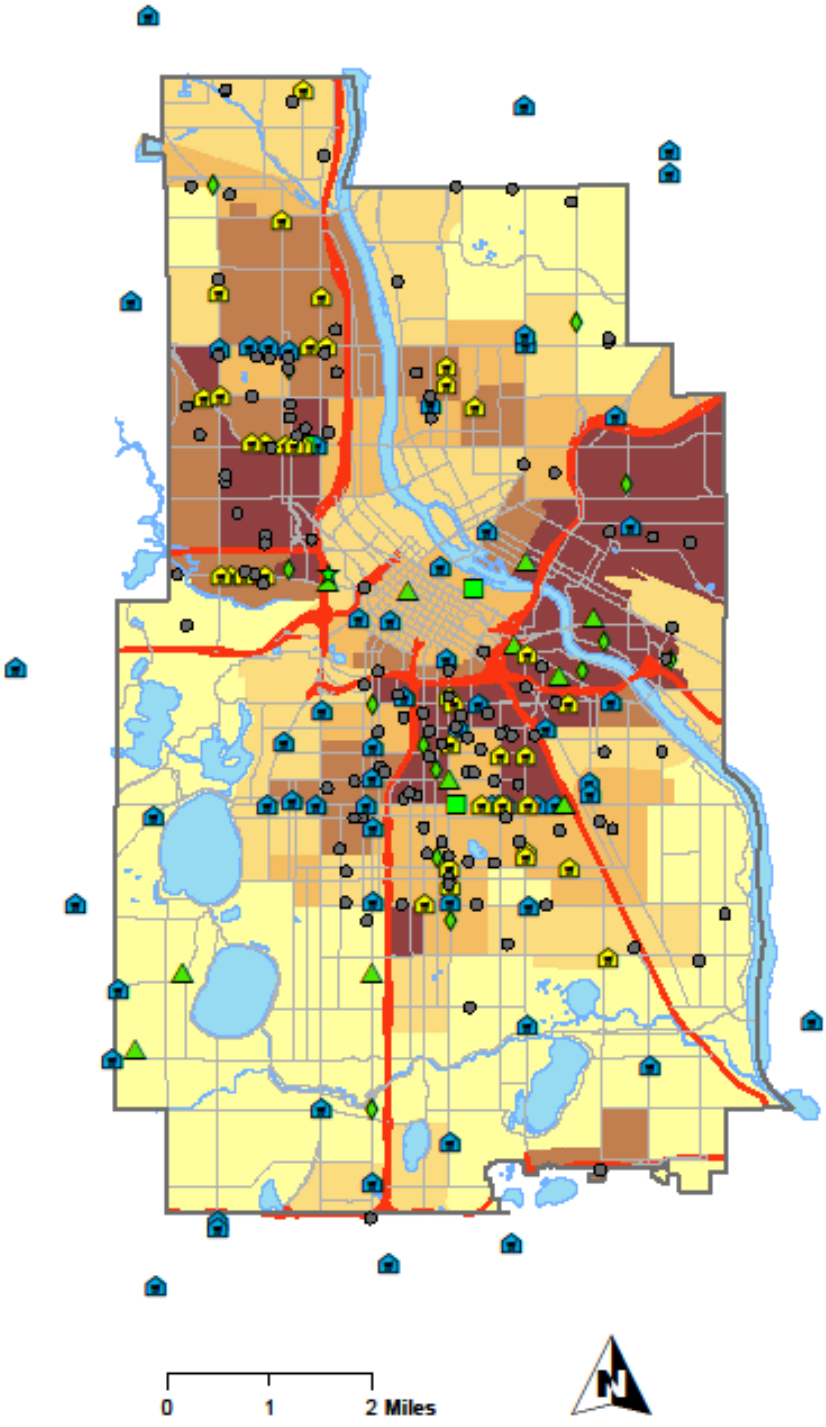
- <5%
- 5.1% - 10%
- 10.1% - 15%
- 15.1% - 20%
- >20%
- High Frequency Transit Service

Map includes grocery stores up to 1 mile from city boundaries.

Sources: U.S. Census Bureau American Community Survey (2007-2011 Estimates), City of Minneapolis, Gardening Matters, MetroGIS.

Created by:
City of Minneapolis - Sustainability
City Coordinator's Office
April 2013

Healthy Food Outlets and Poverty in Minneapolis



Map includes grocery stores up to 1 mile from city boundaries.

Sources: U.S. Census Bureau American Community Survey (2007-2011 Estimates), City of Minneapolis, Gardening Matters.

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City of Minneapolis - Sustainability
City Coordinator's Office
March 2013